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ABSTRACT

Based on the Las Palomita, New Mexico Sensory Training Program, suggestions are offered to parents for activities that can be done at home to improve the sensory motor integration of children with cerebral palsy or other physical or mental handicaps. Included are directions for activities to improve posture, balance and coordination and walking as well as for making or purchasing inexpensive equipment. (LH)

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Sensory-Integration and Motor Planning Activities for Handicapped Children

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SENSORY-INTEGRATION AND MOTOR PLANNING ACTIVITIES FOR HANDICAPPED CHILDREN

developed by

LAS PALOMITAS, EARLY CHILDHOOD EDUCATION
FOR THE HANDICAPPED
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Materials Adapted From

The Works Of

Dr. A. Jean Ayres
and
Dr. Bryant Cratty

For many years sensory-motor activities have played an important part in the education of retarded children. Such activities have recently been successfully used also with physically handicapped and multi-handicapped children. Programs which place great emphasis on opportunities for physical movements are helpful to handicapped children for a number of reasons.

Some children with physical disabilities which limit their movement are also limited in their social contacts which leads to poor self-concept, perceived inability to perform well and compete with peers. If properly constituted, active physical programs provide children an opportunity to acquire important recreational skills. With the acquisition of such skills, children gain a more positive self-concept, and therefore will probably perform better in school.

Many retarded children have poor muscular coordination, which often stems from poor motor planning, that is, they do not choose appropriate and efficient ways to perform motor tasks. Well sequenced motor education program is of great help to these children.

Even hyperactive children may be calmed down and relaxed at the end of vigorous physical activity.

Children with a visual or auditory disability feel more secure and less threatened using Sensory Motor equipment than using traditional equipment, and become more physically aggressive.

Not all children can or should use all the equipment at their disposal. However, vestibular (inner ear) stimulation is extremely important and desirable for a number of sensory-integration-deprived children. Vestibular and tactile inputs travel to many parts of the brain. Bombardment that goes to the brain stem is just as important as that which goes to the cortex, and many stimuli stop at the brain stem. Putting the child's head in as many different positions as possible, many receptors are activated and perhaps dormant nerve connections are opened up. Paul Schuler felt that this type of motion had a unifying effect on all other body systems. Since much visual space and form integration occurs at the mid-brain, it becomes obvious that the neocortex does not perform adequately unless the brain stem does.

Postural mechanisms are also fundamental to sensory integrative development of learning, especially learning to read. Visual motor and locomotor responses in the mid-brain are <u>one</u> integrated function. Much locomotor control (motor control of entire body) occurs at the brain stem.

Therefore, a valuable offering for the children at Las Palomitas is the "Sensory-Motor" training program.

The "Sensory-Motor Room" is organized with special equipment to stimulate the children and try to ameliorate specific physical problems. All of the children

in the program use the room.

As with the entire Las Palomitas program, one of the main goals is to involve parents so that the children might continue their "Sensory-Motor" activities at home. To do this, the children need equipment similar to that used at the school. In this article the plan is to present several activities that parents of handicapped children can do with them at home. There will also be directions and suggestions where specific materials may be purchased. In general, the activities are uncomplicated; the equipment can be inexpensive and simple to make, and the results are invaluable. By means of parent/teacher conferences, the parents are informed of the activities in the Sensori-Motor Room and why they are so important to each individual child.

An activity that gives tremendous stimulation to the muscles essential for erect posture is the "Inner-Tube Roll". To make such a roll, four small inner-tubes are needed, preferably those used on Volkswagon or Honda cars. The four inner-tubes are lashed together with very strong rope or electrician tape so that they are attached together in the manner shown in Figure #1. The inside should be covered with textured material, such as scrap carpeting. The child then crawls into the tubes and keeping arms straight at sides, tries to roll himself about. The only part of his body he should be able to move is his neck, thus the extensor muscles in this area are strengthened. If inner tubes are unavailable, you can wrap the child very tightly in a blanket and secure the loose edges with large safety pins. Make sure that the only thing the child can freely move is his neck. This will accomplish a similar result. This activity also involves vestibular, tactile and visual stimulation. Dr. A. Jean Ayres, Assistant Professor at the University of Southern California states that this activity and the results accomplished by the strengthening of the extensor muscles have a direct relationship to reading ability.

An activity for improving balance and coordination, is the use of a one-legged stool. This stool can be made from a broad piece of scrap lumber, with a slender leg placed in the middle. See Figure #2. If the child is having a very hard time with his balance, you might start off by placing two legs under the stool, and gradually work up to the one leg. The child then sits on the stool and engages in activity, meanwhile trying to maintain his balance at all times. For instance if two children are sitting on opposite stools, they can toss a bean bag or roll a ball back and forth to each other. If a child is playing alone, he can sit on a stool and proceed to kick a ball, aiming to get it inside a box that has been turn on its side. This activity is very good for visual perception and vestibular stimulation. The child does not necessarily have to play while sitting on the stool. You can read to him, or he can read to himself or work a puzzle----anything will work as long as balancing is a <u>subconscious</u> function.

The following activities involve the equipment known as the "Slazy-Walks". Children who are just learning to walk may be encouraged not to scissor (or cross his legs) by requiring him to walk on two parallel "Slazy Walks". This activity should be used only when children have taken off their shoes, thus, the children receive additional tactile sensations from the crunchy surface of the "Slazy-Walks". The "Slazy Walk" can be made from heavy plastic terry cloth which has been sewn into a tube six inches

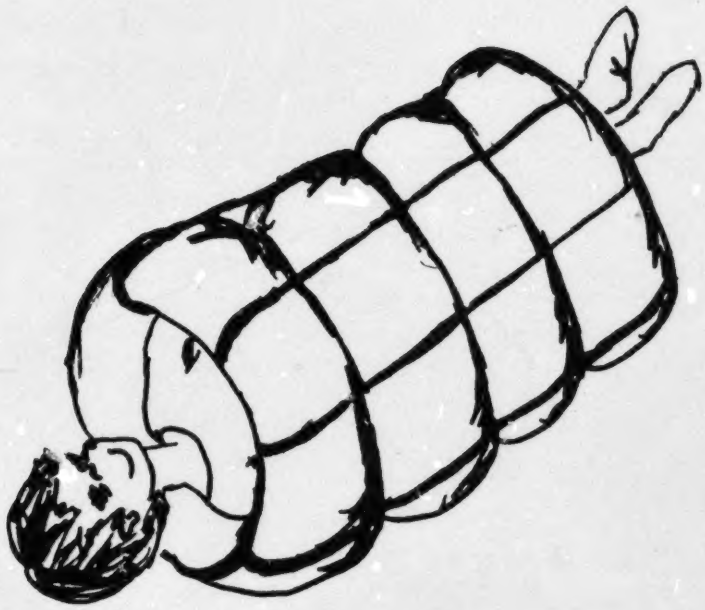


Figure 1

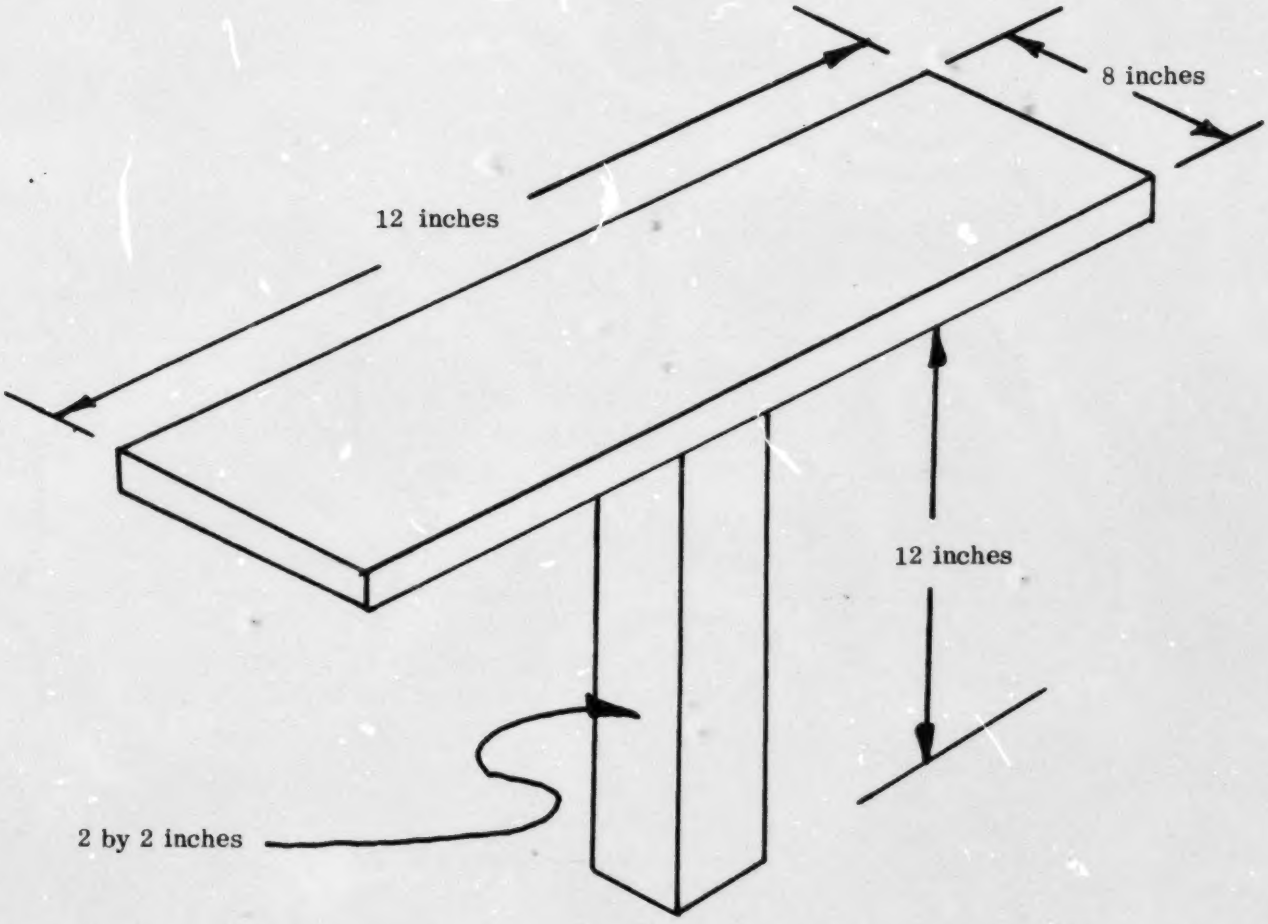


Figure 2

(6") wide and about ten (10) feet long. Inside the tube you can put rice, dried beans, or styrofoam pellets.

You can make several arrangements in the pattern which the child has to follow. Walk along with him and play "Follow-The-Leader". While it is obvious that walking on these crunchy surfaces is highly satisfying and probably aids the young child to achieve better dynamic balance, more important is the fact that he may be encouraged to exhibit increasing amounts of self-control and sustained attention; both are helpful qualities when he enters school.

One of the most enjoyable activities is the use of the "Scooter Board". This board can be made by covering a 15" by 18" piece of 3/4 plywood with carpeting. Two pieces of 3/4 inch plywood are attached to the underside to serve as reinforcing boards. Nuts and bolts, rather than nails, are used for construction to give the scooter board better durability. Shepherd casters are then attached to these boards. Make sure that you do not use anything but these specific casters because they roll easier and last longer. If less expensive casters are used, the children cannot move around as easily, and therefore become discouraged and won't try. Underneath the board a piece of leather or heavy fabric should be attached. It needs to be wide enough so that a thinner piece of leather or rope may pass through it. This rope will be used for pulling the child around on the scooter board and removed when not desired. The child can propel himself by lying on his stomach and using hands, keeping legs straight or using hands and knees. See Figure #3.

A very simple activity that requires no special equipment is rolling. The child assumes the simple rolling position of lying on his back or side, tucking his knees under his chin and wrapping his arms around his knees and proceeds to roll. It is better if the child rolls on carpet with as few clothes on as weather permits because this allows for more tactile stimulation. If weather permits, rolling in grass is very stimulating to the child.

It is important for all children, not just the physically handicapped children, to have their feet supported while they are sitting in a chair. If a child is sitting in a chair that will not permit his feet to touch the floor, then a support should be placed under them so that they will not dangle. Anything can be used to support the child's feet. Examples are catalogs, books, or boxes. It is easy to make a box the correct height for support and paint it or cover it with cloth so that the child feels that he has his own personal foot stool. See Figure #4.

In all activities when you are making equipment for your child, make sure that he is allowed to help or participate in some way which helps improve the parent-child relationship.

Climbing is very good for children. Of course you should supervise this activity, but climbing up hills, ladders, trees, flights of stairs will help develop strength and coordination.

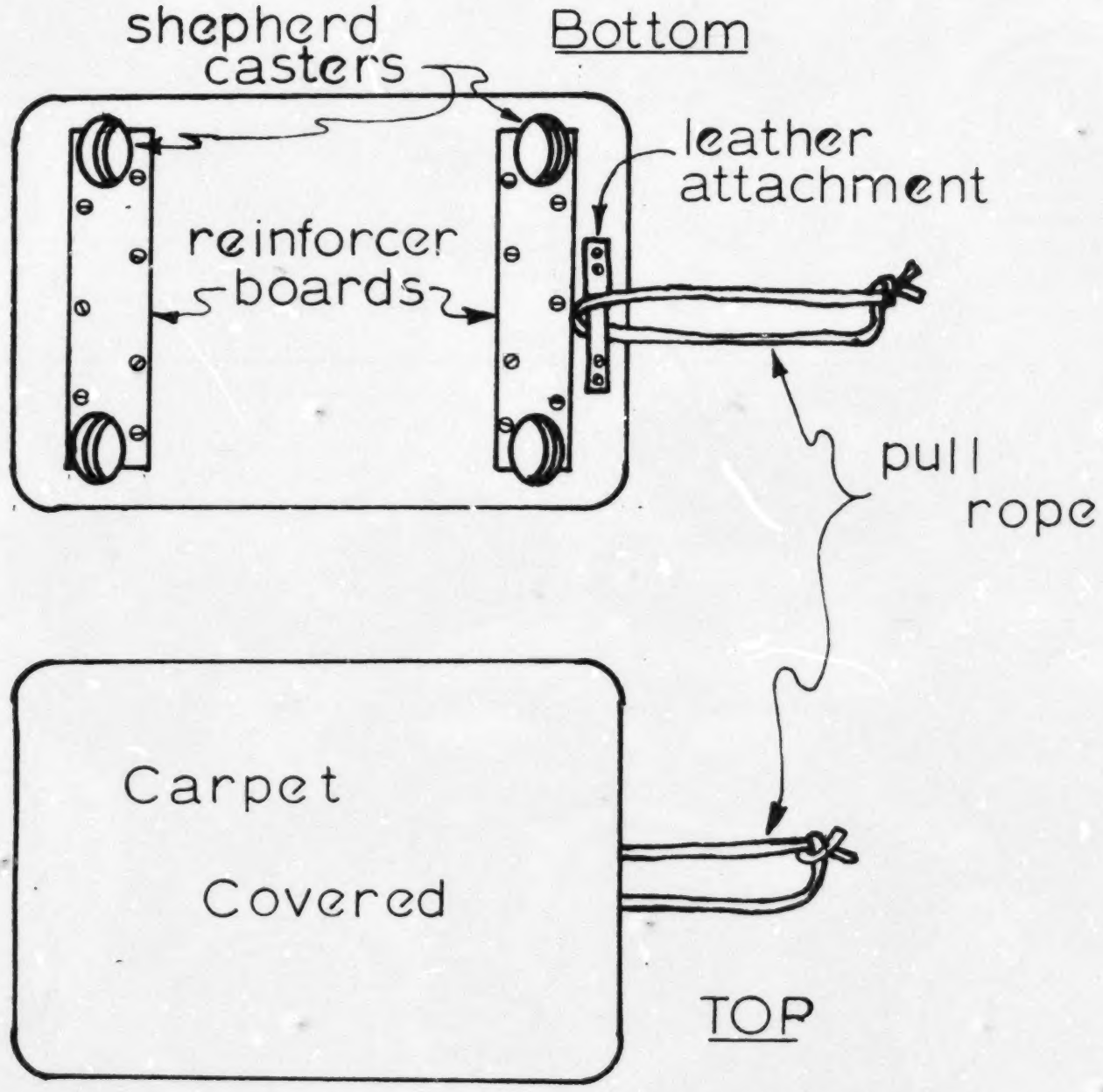
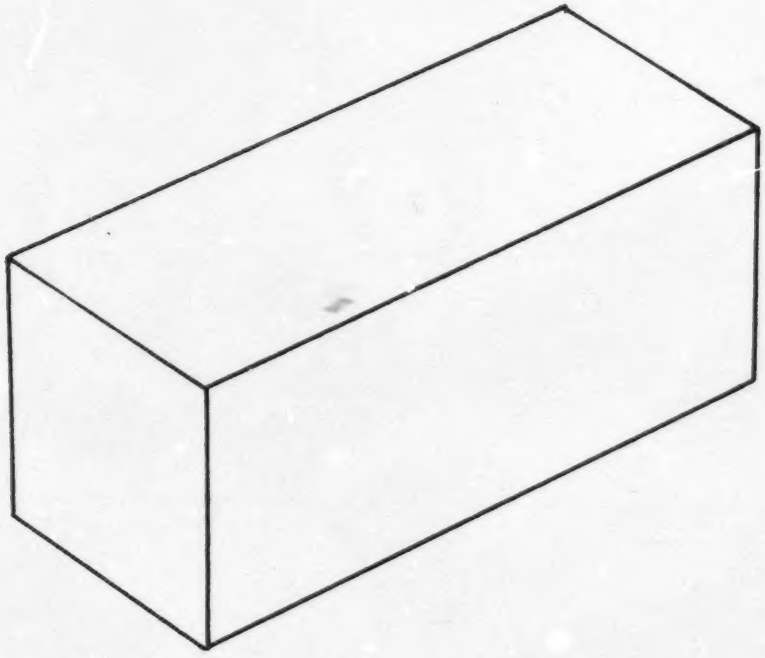

shepherd casters
Bottom
leather attachment
reinforcer boards
pull rope
Carpet
Covered
TOP

Figure 3



Length 12 inches
Height as needed
Width about 10 inches or the length of the child's foot.

For child with tight heel cords, a sloping stool with a raised edge should be used.

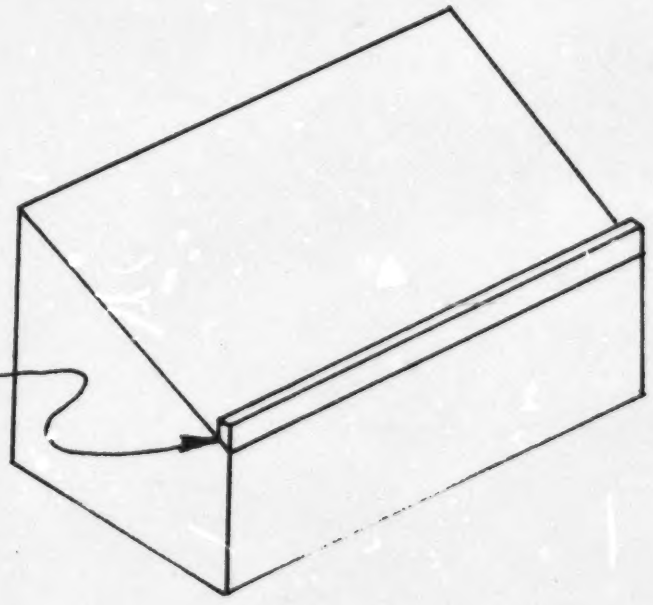


Figure 4

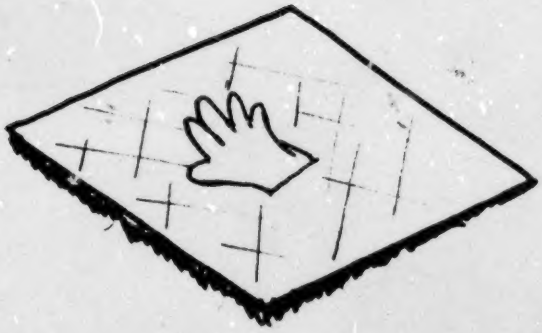
Children with spastic cerebral palsy usually have a hard time keeping their legs apart; they tend to cross over (scissor) when they walk. A good activity to help the child strengthen the muscles that pull his legs apart is to make bands from truck inner-tubes or use the elastic from the tops of women's pantyhose or men's jockey shorts. Put the bands around both of the child's legs above knees and have him climb sideways up an inclined plane on knees or feet. Have the child walk towards you sideways instructing him to pull his legs apart as far as he can. This will help in stability and walking in general.

Any games in which children have to "Follow-The-Leader" are excellent for socialization purposes. For example, several slazy walks can be used to form a pattern and have the children follow the person who has been chosen to be the leader. This will greatly benefit children later on, when they have to follow directions in school. Carpet mats that have hands and feet painted on them can also be used for this type of game. You might have boxes or pillows that children have to climb over and at the base of these put some squares. The squares should be color-coded, that is the right hand and foot should be one color (red) and the left hand and foot should be another color (blue). Make sure that you do the drawings on the back (hard side) of the carpet or the right side of "indoor-outdoor" carpeting. Also, do not be "picky" about the child getting exactly within the boundaries of the print. Just make sure that he gets the general idea. See Figure #5.

If your child has cerebral palsy or other neurological or orthopedic problems that cause him to walk on toes, with feet turned in; encourage him to walk with heels down and toes turned out. A good exercise for this, is to get a large can or drum, pad it, and cover it with terrycloth. The child should then lean over this and attempt to hit a ball on the other side with his bat. Other similar types of games can be used. Supervise him, making sure that his heels are flat on the ground at all times. You are trying to get him to do this instinctively (without having to think about it). See Figure #6.

A hammock is very easy to make, or inexpensive to purchase. Try taking a piece of sturdy canvas or a blanket and hang both ends of the hammock together from the same place on a tree or an attachment on the ceiling. Put the child in the hammock and spin him around. The centrifugal motion is very good for inner ear stimulation. Be very careful with this activity. Watch the child closely and if he shows any signs of nausea, fright, paling, or shortness of breath, then stop and take the child out.

Every child needs a place of his own, not just his own room, but a very special enclosed place where he can be alone, or in close contact with another child. It is easy to make a special place for your child by getting a large box like those used for appliances. The inside should be padded with carpet or terrycloth so that the child will get extra stimulation by being in close contact with such textured surfaces. Pillows or anything else that will make the child feel more secure, can be placed in the box. He should wear as few clothes as possible while in this, preferably just a pair of shorts, and no socks or shoes. When a child is in his box with another child, this close contact is very important not only for stimulation, but also for socialization purposes. If it is impossible to get the child a box like this, he may choose a corner



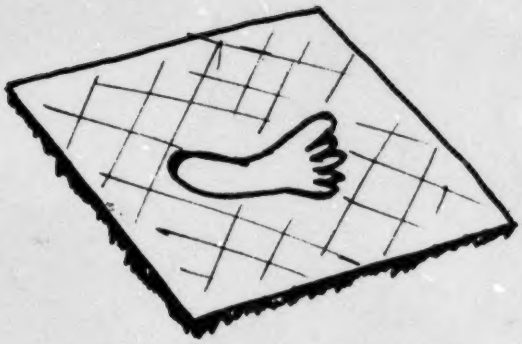


Figure 5

Figure 6

or a closet or under the bed; any place where he feels secure will accomplish these results.

Before trying any of these activities, check with your physician to make sure that there is no reason why your child would not benefit from these activities. Make sure that you watch your child at all times to make sure that he is not experiencing any ill effects from the exercises. Remember to have the child wear as little clothing as weather permits and definitely no socks or shoes. Go slowly with your child. Do not try to do all of these activities in one day or even in one week. Your child's reaction will tell you at what pace to progress, but you must work gradually.

Remember that you are not alone in being the parent of an exceptional child. Even though he may be handicapped, he is still very "normal" in his desires for love and attention. He needs close parental ties, especially with his father or a male companion since he probably spends the majority of his time with his mother or a female companion.

These activities have been prepared for you so that you may spend time with your child in valuable activities that will help him to overcome physical and social problems and will hopefully help you to become more aware of your child and the problems he is experiencing. If you are living in a community that is fortunate enough to have a university, you can seek help from the education program there. There are many towns that have organizations for parents of handicapped children. Call your local school to get information about these organizations if you are interested in joining or forming a club of your own.